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Acoustimass® 5 Series III Loudspeaker System

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Service Manual

Part Number 198662 Rev. 00

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CAUTION: The Acoustimass 5 Series III Loudspeaker System contains no user serviceable parts. To prevent warranty infractions, refer servicing to warranty service centers or factory service.

PROPRIETARY INFORMATION

THIS DOCUMENT CONTAINS PROPRIETARY INFORMATION OF BOSE® CORPORATION WHICH IS BEING FURNISHED ONLY FOR THE PURPOSE OF SERVICING THE IDENTIFIED BOSE PRODUCT BY AN AUTHORIZED BOSE SERVICE CENTER OR OWNER OF THE BOSE PRODUCT, AND SHALL NOT BE REPRODUCED OR USED FOR ANY OTHER PURPOSE.

WARRANTY INFORMATION

The Bose Acoustimass 5 Series III Loudspeaker System is covered by a 5-year transferable limited warranty.

SPECIFICATIONS

External Dimensions:	Satellites:	3.15 x 6.1 x 4.1 in. (8.0 x 15.5 x 10.5 cm)
	Bass Module:	14 x 7.5 x 17.0 in. (35.6 x 18.4 x 43.2 cm)
Weight:	Single Satellite:	2.4 lb. (1.1 kg)
	Bass Module:	21.0 lb. (9.5 kg)
	Packed System:	28 lb. (12.6 kg)
Sensitivity:	Satellites:	≥ 83 dBspl, 400 Hz octave
	Bass Module:	≥ 83 dBspl 100 Hz octave band
Crossover Frequency:		≤ 200 Hz at 6 dB/oct.
System Protection:		PTC, Lamp, Resistor
Cube Protection:		None
Impedance:		6 Ohms nominal, 4.8 Ohms minimum from 20 Hz - 20 kHz, all channels
Power Handling, all channels:		100 Watts continuous per IEC-268-5 for 100 hours. Recommended amplifier/receiver power 10-200 Watts per channel.

PRODUCT DESCRIPTION

The Bose® Acoustimass® 5 Series III Loudspeaker System offers several improvements over the Series II. It uses two extended response satellite speakers that are 20 percent smaller than earlier versions. The satellite speaker assemblies reproduce the middle and high frequencies of two full-range channels. The satellite speaker assemblies use a new style push connector for ease of installation and better wire retention. The satellite speaker assemblies are non-repairable.

The Acoustimass bass module contains two woofers capable of reproducing two channels of low frequency information. The AM-5 Series III system may be used in conventional stereo applications or as left and right (front or rear) channels in a home theater application. The bass module is the same size and appearance as the AM-5 Series II.

DISASSEMBLY/ASSEMBLY PROCEDURES

Note: Refer to Figure 2 for the following procedures.

1. Terminal Cap Removal

1.1 Using a phillips-head screwdriver, remove the six screws (4) that secure the terminal cap (7) to the bass module cabinet.

1.2 Gently pull the terminal cap away from the cabinet. Be careful not to mark the plastic of the terminal cap or chip the wood of the bass module cabinet.

2. Terminal Cap Replacement

2.1 Place the terminal cap (7) onto the bass module cabinet. Make sure it is fully seated against the cabinet.

Note: Be sure the text on the label is aligned with the text on the front of the bass module.

2.2 Replace the six phillips-head screws (4) removed in procedure 1.1. Do not overtighten the screws.

3. Crossover Assembly Removal

3.1 Perform procedure 1.

3.2 Using a phillips-head screwdriver, remove the four screws (9) that secure the crossover assembly (8) to the terminal cap (7).

3.3 Slide the crossover assembly off of the tabs located on the terminal cap.

3.4 Cut the wires as close to the crossover assembly as possible.

4. Crossover Assembly Replacement

4.1 Strip the wires from the woofer assemblies (2) and solder them to the appropriate locations on the crossover assembly (8).

4.2 Slide the crossover assembly onto the tabs located on the terminal cap (7).

4.3 Replace the four screws (9) removed in procedure 3.2.

4.4 Perform procedure 2.

5. Woofer Assembly Removal

5.1 Perform procedure 1.

5.2 Using a phillips-head screwdriver, remove the four screws (3) that secure the woofer assembly (2) you wish to remove to the cabinet.

5.3 Lift the woofer assembly out of the cabinet and cut the wires as close to the terminals as possible.

Note: Be sure to replace the woofer gasket (1) when you replace the woofer assembly.

6. Woofer Replacement

6.1 Strip the woofer cable wires.

6.2 Using a few small pieces of cellophane tape, secure the new woofer gasket (1) to the woofer assembly (2). This will hold it in place while you install the woofer assembly into the bass module cabinet.

6.3 Solder the woofer cable wires to the woofer assembly. Refer to Figure 5.

6.4 Secure the woofer assembly in place using the four screws (3) removed in procedure 5.2.

6.5 Perform procedure 2.

TEST PROCEDURES

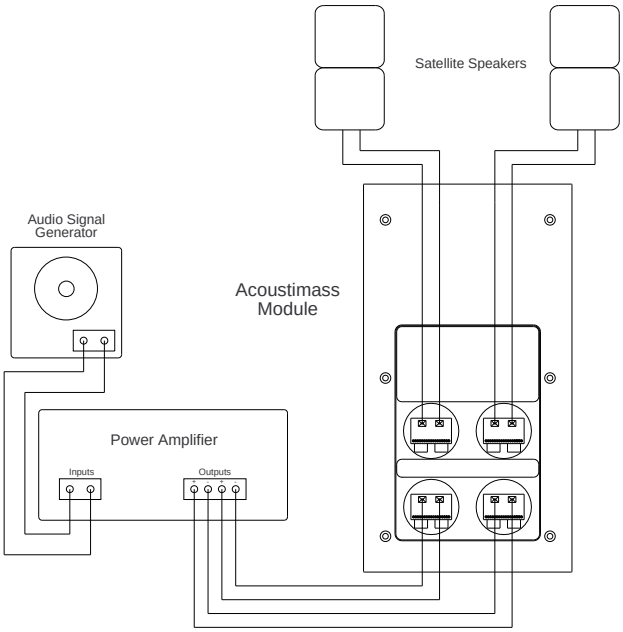


Figure 1. Acoustimass® 5 Series III Test Setup Diagram

1. Bass Module Air Leak Test

1.1 Apply a 100 Hz, 10 Vrms sine wave to the left and right channel inputs of the bass module. Do not connect the satellite speakers.

1.2 Listen carefully for air leaks from around the terminal cup and cabinet seams. Air leaks will be heard as a hissing or sputtering sound. All repairs must be hidden. Test duration should be 5 seconds minimum.

2. Woofer Phase Test

2.1 Apply a 50 Hz, 10 Vrms sine wave to the left and right channel inputs of the bass module.

2.2 While the signal is being applied to the bass module, remove the input to one of the channels.

2.3 The sound output level should drop by approximately half. If the sound output level increases or stays the same, then there is a wiring problem in the woofers.

3. Woofer Rub and Tick Test

3.1 Perform Disassembly/Assembly procedure 5. Do not cut the wires at the woofer assembly terminals.

3.2 Connect a signal generator directly to the terminals of the woofer assembly under test.

3.3 Apply a 10 Hz, 10 Vrms signal to the woofer assembly.

3.4 Listen carefully for any extraneous noises such as rubbing, scraping, or ticking.
Note: To distinguish between normal suspension noise and rubs or ticks, displace the cone slightly with your fingers. If the noise stays the same, it is normal suspension noise and the woofer is fine. Suspension noise will not be heard with program material.

4. System Sweep Test

4.1 Set up the system as shown in Figure 1.

4.2 Apply a 10 Hz, 10 Vrms sine wave to the left and right signal inputs.

4.3 While listening to the output of the system, sweep the input frequency slowly up from 10 Hz to 500 Hz.

4.4 The output should smoothly cross over from the bass module to the satellite speakers.

4.5 Reduce the input voltage level to 5 Vrms.

4.6 Continue sweeping from 500 Hz to 15 kHz. Replace any satellite assembly that buzzes or sounds distorted.
Note: The Acoustimass 5 Series III satellite assemblies are non-repairable. If you have a defective satellite assembly, it must be replaced.

PART LIST NOTES

1. This part is not normally available from Customer Service. Approval from the Field Service Manager is required before ordering.

2. The individual parts located on the PCBs are listed in the Electrical Part List.

MAIN PART LIST

Acoustimass® 5 Series III (see Figure 2)

Item Number	Description	Part Number	Qty.	Note
1	GASKET, WOOFER, 6.5"	104794-08	2	
2	WOOFER ASSY, 5.25"	190170	2	
3	SCREW, TAPP, 8-11x.75, PAN, XRC/SQ	172672-12	8	
4	SCREW, TAPP, 8-11x1.5, PAN, XRC/SQ	172672-24	6	
5	LABEL, PRODUCT, AM5 III	196449	1	
6	CONN, BARRIER, GLTN, 2 POS, BLK	170036	4	
7	CAP, TERMINAL, BLACK	173311-1	1	
7	CAP, TERMINAL, WHITE	173311-2	1	
8	CROSSOVER ASSY, AM-5 III	196456	1	2
9	SCREW, TAPP, 6-13x.375, PAN, XPC/S	172783-06	4	
10	GASKET, TAPE FOAM	175548	2	

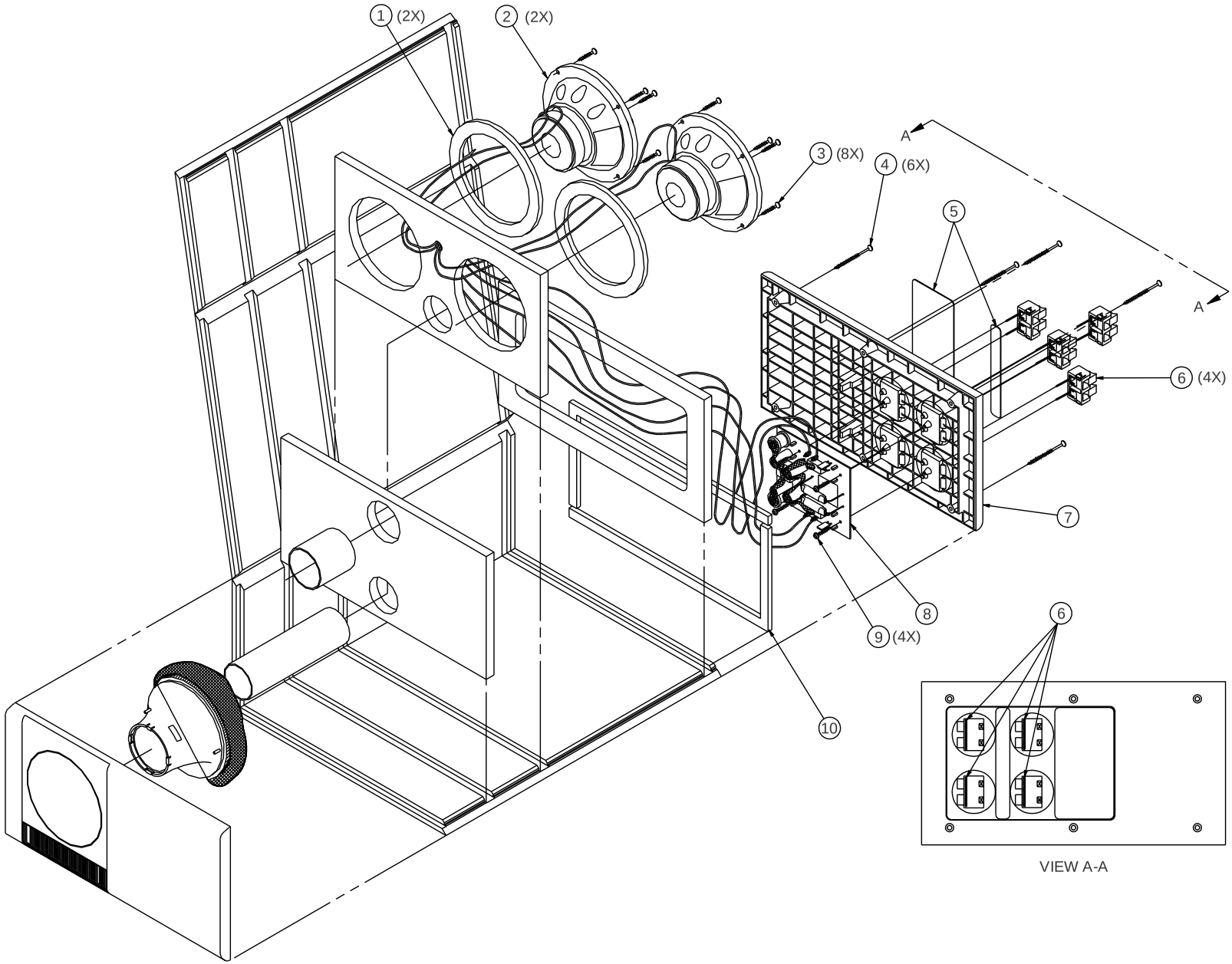


Figure 2. Acoustimass® 5 Series III Bass Module Exploded View

PACKING LIST

Acoustimass® 5 Series III Loudspeaker System (see Figure 3)

Item Number	Description	Part Number	Qty.	Note
1	PACKING, CORNER, POST, BASS INSRT	148364	2	
2	PACKING, CORNER, POST, BASS MOD	148044	2	
3	SATELLITE ASSY, SGL, BLK	192420-019	2	
3	SATELLITE ASSY, SGL, WHT	192420-029	2	
4	BAG, POLY, 13.5x35x9.5x2.5 mil	114522	1	
5	WIRE, 18/2 ZIP CORD, WHITE, 20 FT	140236	4	
5	WIRE, 18/2 ZIP CORD, BLACK, 20 FT	130915	4	
6	PACKING, TRAY, D/C, AM-5 II	148362	1	
7	SHT, QUICKSTART, AM5 III	196459	1	
8	BUMPER, RECESSED, FOOT, .88"	142839	4	
9	MANUAL, OWNER'S AM-5 III	196451	1	
10	BAG, POLY, 14.38x9.87x2 mil	103351	1	
11	INFORMATION CARD, WARRANTY U.S.	181357	1	
12	BROCHURE, ALL PRODUCTS	188898	1	
13	INFO CARD, WARRANTY, MULTI-LANGUAGE	181460	1	
14	CARTON, RSC, AM-5 III	196448-00	1	

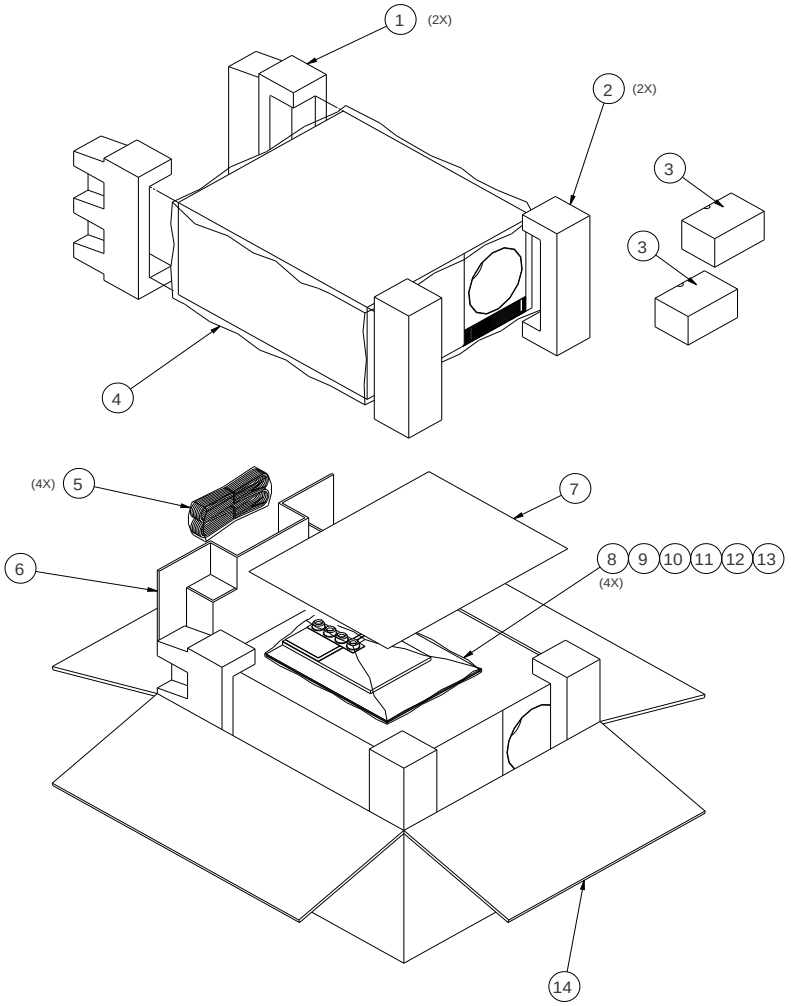


Figure 3. Acoustimass® 5 Series III Loudspeaker System Packing View

PART LIST

Acoustimass® 5 Series III Loudspeaker System Crossover (see Figure 4)

Reference Designator	Description	Part Number	Qty.	Note
R1, 2	39 Ohm, WW, 5W	132105-390	2	
R3, 4	5.1 Ohm, WW, 5W, 10%	132105-5R1	2	
C1, 2	47 uF, EL, BP, 85, 50V, 20%	136548	2	
C3, 4	15 uF, EL, BP, 85, 50V, 20%	132079	2	
DS1, 2	LAMP	141989	2	
L1, 2	350 uH, INDUCTOR ASSY,	196463	2	
PTC1, 2	SWITCH, POLY, 50V, 4mm	175233-1	2	
-	CONN, TERMINAL, 1 POS, FEMALE	147946	8	
-	PIN, GROOVED, .52x.34x.045	129000-5234	4	
-	TAPE, FOIL, W/LINER	134636	1	
-	WASHER, .125" #4, FLAT	108258-04	2	
-	WASHER, FLAT, .141", #5	108258-05	2	
-	SCREW, MACH, 4-40x1, PAN, XREC	103146-16	2	
-	NUT, HEX, 4-40	103234-440	2	

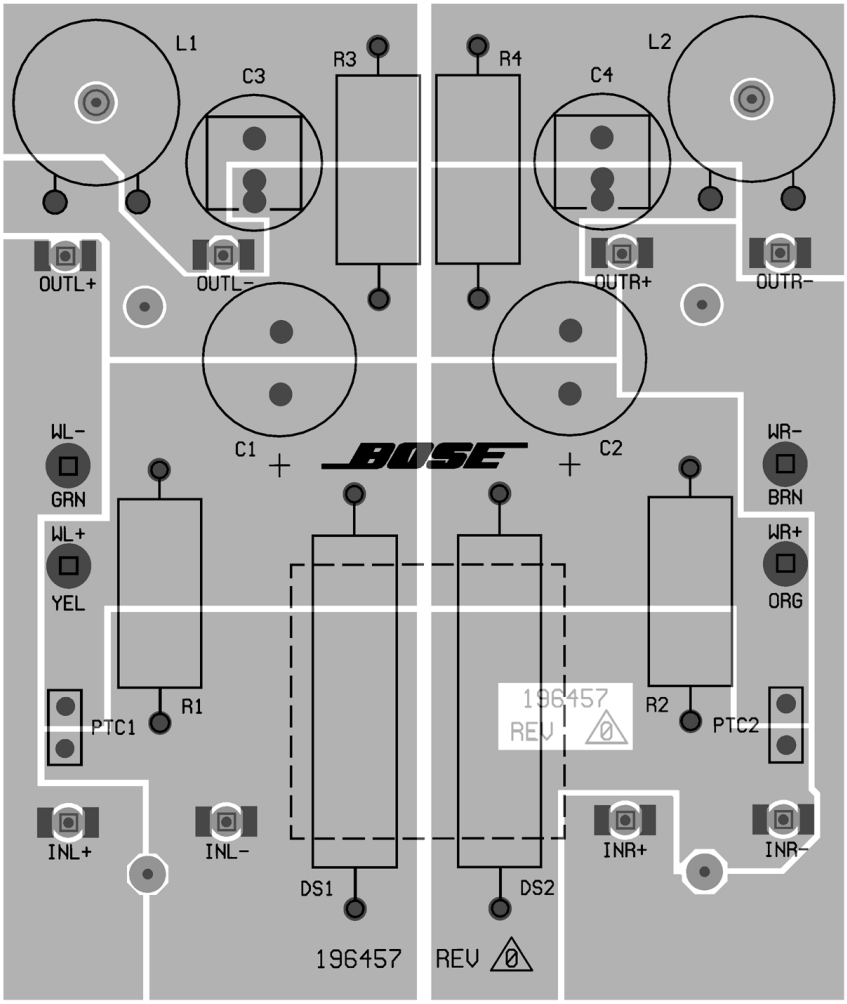
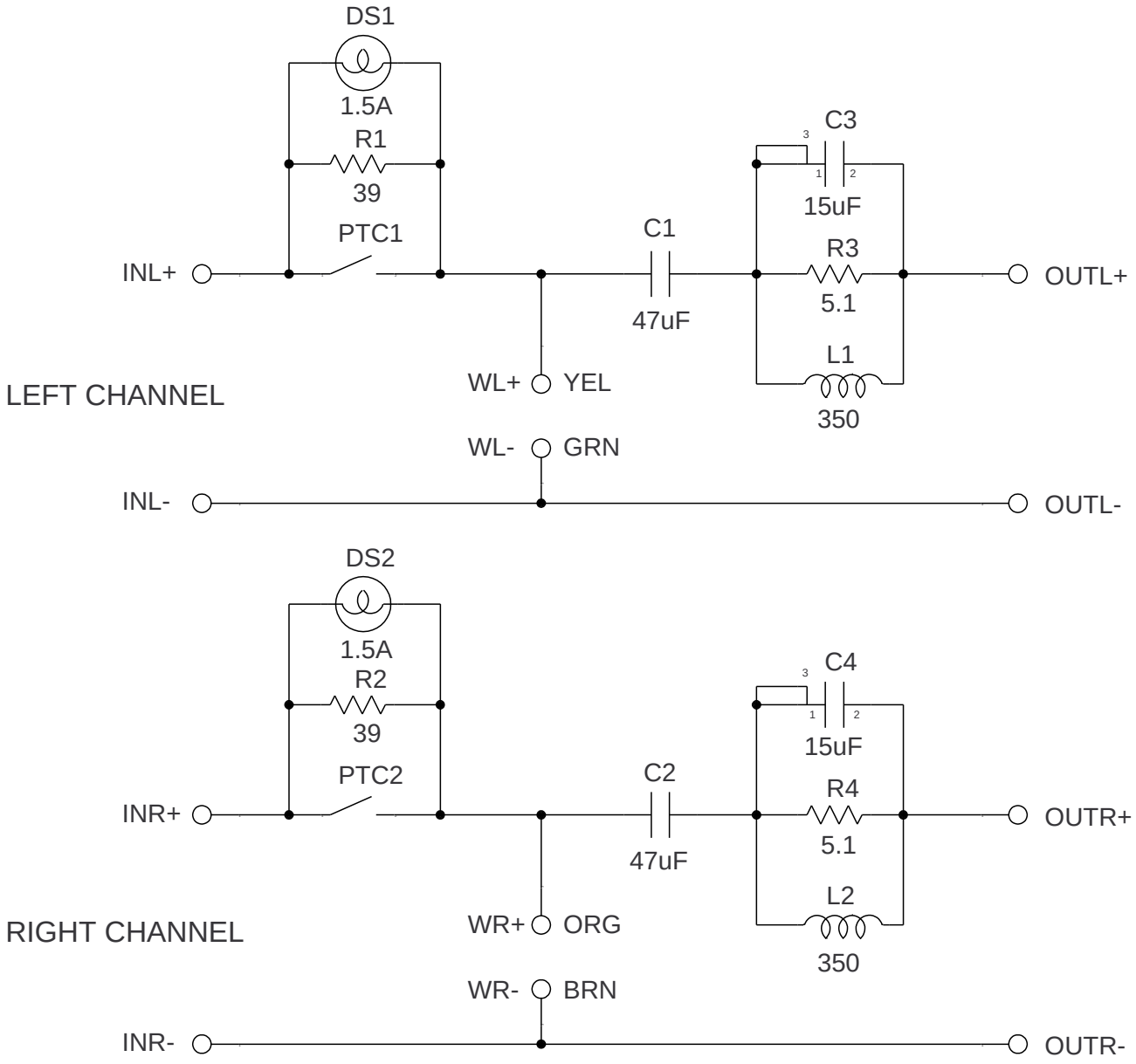


Figure 4. Acoustimass® 5 Series III Loudspeaker System Crossover Layout Diagram



NOTES: UNLESS OTHERWISE SPECIFIED
1. RESISTOR VALUES ARE IN OHMS.
2. CAPACITOR VALUES ARE IN MICROFARADS.
3. INDUCTOR VALUES ARE IN MICROHENRIES.

Figure 5. Acoustimass® 5 Series III Crossover Schematic Diagram